

## NEBC MEETING NEWS

**November 2002.** Vice President Art Gilman introduced Dr. Dorothy J. Allard, who spoke on “A New Epiphytic Species of *Pedicularis* from Nepal: Description and Demography.” An enjoyable evening was spent in vicariously traveling to the King Mahendra Trust for Nature Conservation in Nepal where Dorothy had collected data on the influence of grazing on the vegetation of the subalpine fir forest zone as part of her doctoral research.

The Annapurna Conservation Area is in central Nepal south of the crest of the Himalayas. Fir forests occur from 2900–3500 m in elevation there, but are not continuous. The canopy trees are *Abies spectabilis* with an understory of two *Rhododendron* species, *R. campanulatum* and *R. barbatum*. The largest firs had diameters approaching 2.5 m. The fir–rhododendron forest zone where the *Pedicularis* was found has a full exposure to the summer monsoon with a high precipitation during the growing season, while being snow-covered from December through March. Orographically induced circulation patterns cause cloud forest conditions in this region, resulting in the highest recorded rainfall in Nepal (6000 mm/year). The cloud forest conditions promote a luxuriant growth of epiphytes, where vascular species grow with their roots under and inside a layer of bryophytes. It was in this situation that Dr. Allard encountered an unknown species of *Pedicularis*.

Dr. Robert Mill at the Royal Botanic Gardens in Edinburgh confirmed that the find represented a species new to science. *Pedicularis* has a center of distribution in SW China and ranges throughout the northern hemisphere, commonly in montane and alpine areas. There are about 600 species in the genus. All known species are hemiparasitic, however no epiphytic species are known to exist. Further, the typical *Pedicularis* flower has an upper lip (galea) and a lower lip (labellum) that face outward from the inflorescence axis; in this new species the entire corolla is rotated such that the galea faces inward toward the axis of the inflorescence.

In 2001, Dr. Allard returned to the study area to collect additional flowering material of the new *Pedicularis*. She was unable to find the plant in study sites to the east or west of this area, suggesting that there may be only one isolated population. She surveyed and mapped its locations and studied its flower devel-

opment and pollination biology. The new species grows on living trees and on dead wood, rarely on other substrates. While it has a strong dependence on *Abies*, it also grows on *Rhododendron*. It was observed to grow as far as 35 m above the ground. As leaf length and number increased, so did the likelihood of flowering. Plants with the longest leaf length ( $> 20$  cm) had a 40% flowering rate with 1–4 stalks per plant. The plants are probably perennial.

While Dr. Allard's 2001 field work provided additional information on the life history characteristics of the new *Pedicularis*, many questions remain unanswered. For example, no pollinators were detected during 90 hours of observation, though the flowers seemed not to self-pollinate. The dispersal mechanism is unknown, and the seeds had no structure that would provide for movement upward into the canopy, such as wings or elaiosomes. Clearly more study is needed to fit this novel *Pedicularis* into our understanding of this genus.

—NEAL W. ANDERSON, Recording Secretary.